

IN THE CLAIMS

1. (currently amended)      A core for a nuclear reactor comprising:

a plurality of separate independent fuel assemblies wherein each said separate and independent fuel assembly is not a component of another fuel assembly, each said separate independent fuel assembly comprising a handle to facilitate lowering said fuel assembly into said core; and

a plurality of large control rods, each said control rod comprising four control rod blades extending radially from a central portion and arranged at right angles to each other, said blades defining four fuel assembly receiving channels, said control rods arranged in a plurality of staggered rows with only four separate independent fuel assemblies in each said receiving channel and two sides of each of said four separate independent fuel assemblies adjacent a control rod blade.

2. (previously presented)      A core in accordance with Claim 1 wherein said large control rods and said plurality of fuel assemblies define a plurality of fuel cells, each said fuel cell comprising a large control rod and four fuel assemblies in each said receiving channel of said large control rod, said plurality of fuel cells arranged so that said control rods are in a staggered row pattern where each side of each said receiving channel of a fuel cell is adjacent to, and substantially parallel to a control rod blade.

3. (canceled)

4. (original)      A core in accordance with Claim 1 further comprising a top guide having a plurality of top guide beams configured to define a plurality of openings.

5. (previously presented)      A core in accordance with Claim 4 further comprising a core plate spaced from said top guide, said fuel assemblies extending between said top guide and said core plate.

6. (currently amended) A core for a nuclear reactor comprising a plurality of fuel cells, each said fuel cell comprising;

a large control rod comprising four control rod blades extending radially from a central portion and arranged at right angles to each other, said blades defining four quadrants of said fuel cell, each said quadrant containing only four separate independent fuel assemblies wherein each said separate and independent fuel assembly is not a component of another fuel assembly, each said separate independent fuel assembly comprising a handle to facilitate lowering said fuel assembly into said core;

said plurality of fuel cells arranged so that said control rods are in a staggered row pattern where each side of each said quadrant of a fuel cell is adjacent to a control rod blade.

7. (canceled)

8. (original) A core in accordance with Claim 6 further comprising a top guide having a plurality of top guide beams configured to define a plurality of openings.

9. (previously presented) A core in accordance with Claim 8 further comprising a core plate spaced from said top guide, said fuel assemblies extending between said top guide and said core plate.

10. (currently amended) A nuclear reactor core configuration, said core comprising a plurality of separate independent fuel assemblies, wherein each said separate and independent fuel assembly is not a component of another fuel assembly, and a plurality of large control rods, each said separate independent fuel assembly comprising a handle to facilitate lowering said fuel assembly into said core, each said control rod comprising four control rod blades extending radially from a central portion and arranged at right angles to each other, said blades defining four fuel assembly receiving channels, said configuration comprising:

said plurality of large control rods arranged in a staggered row pattern; and

said fuel assemblies arranged with only four separate independent fuel assemblies in each said receiving channel and two sides of each of said four separate independent fuel assemblies adjacent a control rod blade.

11. (canceled)

12. (original) A nuclear reactor core configuration in accordance with Claim 10 wherein said core further comprises a top guide having a plurality of top guide beams configured to define a plurality of openings.

13. (previously presented) A nuclear reactor core configuration in accordance with Claim 12 further comprising a core plate spaced from said top guide, said fuel assemblies extending between said top guide and said core plate.